

REMARKS

The present amendment is submitted in an earnest effort to advance this case to issue without delay.

1. The priority claim acknowledgment is appreciated.

2. There is enclosed a PTO-1449 formally listing Austrian patent AT 405 591 B which was mentioned on page 3, line 7.

3. There is enclosed a print showing a proposed change in the drawing in red ink.

That change shows in a dot dash line a thin electric insulating layer between the initiator bridge and the reactive layer. The drawing change has been required by the Examiner. A formal drawing will be submitted embodying the change when the change is approved.

4. A specification amendment has been provided to correct the reference to the reactive metal 6'' in FIG. 4 and to refer by reference numeral 13 to the thin electrically insulating layer. No change has been made in the reference to a "glowing bridge" since there is no contradiction between the initiation

5. The claim objections have been dealt with in the amendments to the claims. Claims 1 and 14 have been amended to remove the reference to a combustible metal and, therefore, to define the metal of the reactive layer as one which is capable of liberating energy by alloying with the metal of the bridge. A new claim 17 has been added to define a feature of the invention described at page 5, lines 8 to 23.

6. The claims now in the case are all believed to be allowable over the Baginski reference which is no longer anticipatory since it does not describe providing a pyrotechnic initiator with a reactive layer which liberates energy by alloying with the metal of the bridge.

The only question with respect to claims 1 to 4, 6 to 11 and 13 to 16, therefore, is whether it would have been obvious from Baginski to provide a reactive layer capable of alloying in the sense of the invention.

The Examiner has relied on Cummings to show that one could select a metal such as nickel and a metal such as aluminum, apparently believing that Cummings deals with an alloying reaction which delivers heat. However, that is not the case.

As the Examiner himself has noted, Cummings describes a Goldschmidt reaction that requires a metal in powder form be mixed with a powder form of a metal oxide.

When this mixture is heated, the elemental metal forms a metal oxide and the metal oxide forms the metal by an oxygen displacement reaction liberating significant amounts of free energy.

The result is a kind of redox reaction. A mixture of this type is not likely to be functional for the long periods of time required for an igniter, frequently more than 10 years.

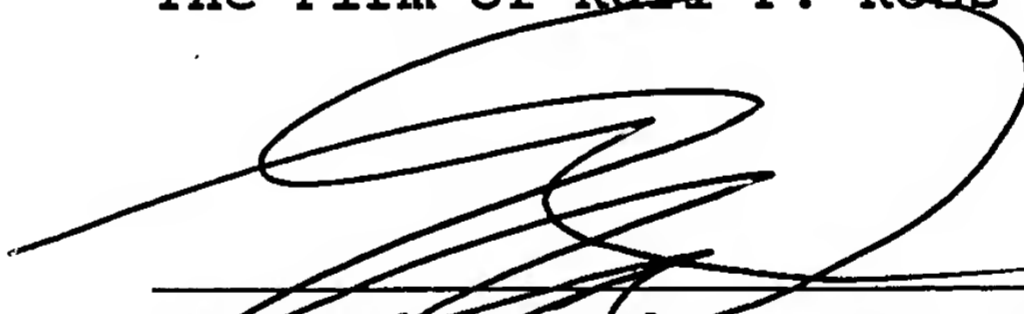
The redox reaction may be an alternative for a reaction of the type with which the invention is concerned but whether such a reaction would be better in some respects than the liberation of heating by alloying or not is irrelevant to the question as to whether the invention would have been obvious from this art and from Baginski and Cummings together. It can be said with assurance that the combination does not suggest the exploitation of heat liberated in an alloy reaction or use in his pyrotechnic initiator, thus claims 1 to 4, 6 to 11 and 13 to 16 must be deemed to be allowable.

7. With respect to claim 17, this claim is directed to the manner in which not only a metal also a pulverulent material are applied simultaneously to the initiator bridge.

In this case, a dispersion electrolysis is used and that is not disclosed anywhere in the art. It simply is not taught in any combination of references which can be considered to disclose the fabrication of an initiator bridge to entrain one of the metals recited in claim 17 as a powder along with the nickel into the activator layer. Claim 17 is likewise deemed to be allowable.

The claims in the case are thus believed to be allowable over the art. Claims 4, 6 and 11 which have been indicated to contain allowable subject matter are retained and are also deemed to be allowable.

Respectfully submitted,  
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